

Appl. No. 09/731,945

Response to Miscellaneous Communication dated 10-30-06

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Amendments to the Claims:

Claims 1-12 (Canceled)

13. (Currently Amended) A double vacuum chamber resin infusion method for a preform comprising:

assembling a preform;

locating the preform on a mold;

sealingly bagging the preform to the mold with an inner bag forming a first vacuum chamber;

sealingly bagging the inner bag to the mold with an outer bag forming a second vacuum chamber;

evacuating the first vacuum chamber;

evacuating the second vacuum chamber with the pressure in the second vacuum chamber being equal to or greater than the pressure in the first vacuum chamber; and

infusing a resin into the preform using a vacuum-assisted resin transfer apparatus.

14. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 13 further comprising debulking the preform by evacuating at least the first vacuum chamber prior to infusing the resin.

15. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 14 further comprising elevating the temperature of at least the first vacuum chamber and then evacuating at least the first vacuum chamber.

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16. (Canceled)

17. (Canceled)

18. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 13 further comprising locating passive vacuum chambers within the first vacuum chamber.

19. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 13 further comprising tackifying the preform with a tackifier prior to bagging.

20. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 13 further comprising:

locating a flow control media between the inner bag and the preform; and

infusing the resin into the flow control media with the resin passing through the flow control media and then into the preform.

21. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 20 wherein the flow control media includes fill fibers that act as weirs to the infusing resin.

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22. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 13 further comprising locating a breather between the inner bag and the outer bag.
23. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 20 further comprising tilting the preform and the flow control media at an angle off horizontal and then infusing the resin into the flow control media with the resin passing through the flow control media and then into the preform.
24. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 23 wherein the tilted flow control media has a lowest point and infusing the resin into the flow control media at the lowest point.
25. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 13 further comprising coupling at least one vacuum pump to the first vacuum chamber via at least one first vacuum tube and coupling at least one vacuum pump to the second vacuum chamber via at least one second vacuum tube.
26. (Previously presented) A double vacuum chamber resin infusion method for a preform according to claim 25 further comprising throttling the at least one first vacuum tube while infusing a resin into the preform.
27. (Amended) A double vacuum chamber resin infusion method for a preform according to claim 13 wherein:

the first vacuum chamber comprising a first space bounded by and including the inner bag and the mold; and

the second vacuum chamber comprising a second space bounded by and including the inner bag, the mold, and the outer bag.

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28. (Withdrawn) A double vacuum chamber resin infusion device for a preform comprising:
- a mold having a surface;
 - a preform located on the surface of the mold;
 - an inner bag coupled to the surface of the mold and enclosing the preform and forming a first vacuum chamber,
 - an outer bag coupled to the surface of the mold and enclosing the inner bag and forming a second vacuum chamber,
 - at least one vacuum pump is coupled to the first vacuum chamber;
 - at least one vacuum pump is coupled to the second vacuum chamber; and
 - a resin source is coupled to the first vacuum chamber.
29. (Withdrawn) A double vacuum chamber resin infusion method for a preform according to claim 28 further comprising at least one passive vacuum chamber in the first vacuum chamber.
30. (Withdrawn) A double vacuum chamber resin infusion method for a preform according to claim 28 wherein the preform is tackified.
31. (Withdrawn) A double vacuum chamber resin infusion method for a preform according to claim 28 further comprising a flow control media located between the inner bag and the preform.
32. (Withdrawn) A double vacuum chamber resin infusion method for a preform according to claim 28 further comprising a breather located in the second space.

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33. (Withdrawn) A double vacuum chamber resin infusion method for a preform according to claim 28 wherein:

the inner bag having an inner surface and an outer surface,
a first area on the surface of the mold is circumscribed by the coupled inner bag,
the first vacuum chamber comprising the inner surface of the inner bag and the
first area and a first space bounded by the inner surface of the inner bag
and the first area;

the outer bag having an inner surface,
a second area on the surface of the mold is circumscribed by the coupled outer
bag, but does not include the first area,
the second vacuum chamber comprising the inner surface of the outer bag, outer
surface of the inner bag and the second area and a second space bounded
by the inner surface of the outer bag, the outer surface of the inner bag and
the second area;

34. (New) A double vacuum chamber resin infusion method for a preform comprising:

assembling a preform;

locating the preform on a mold;

bagging the preform to the mold with an inner bag forming a first vacuum chamber;

bagging the inner bag to the mold with an outer bag forming a second vacuum chamber;

evacuating the first vacuum chamber;

evacuating the second vacuum chamber such that the second vacuum chamber collapses
substantially against the first vacuum chamber; and

infusing a resin into the preform using a vacuum-assisted resin transfer apparatus.